vided 0.30 and Docetaxel 0.31. Therefore, Erlotinib therapy is positioned as a dominant (more effective and less costly) compared to Docetaxel and Pemetrexed. These results were consistent in the sensitivity analysis, giving strength to them. Therefore, Erlotinib could represent annual savings of $5860 compared to Docetaxel and $7090 with Pemetrexed per patient. Additionally, Erlotinib contributes to costs reduction in patients with NSCLC, because it is a chemotherpay administered orally, instead os a intravenous infusion, and with a better safety profile with no hematologic toxicity in comparison with standard chemotherapy. **CONCLUSIONS:** The cost-utility analysis of the use of Erlotinib vs. Docetaxel or Pemetrexed in the treatment of previously treated metastatic or advanced NSCLC showed that Erlotinib is a cost-effective therapy because it consumes fewer resources to obtain clinical success. Under the perspective of the Mexican public health system Erlotinib is dominant alternative in second-line treatment for patients with advanced or metastatic NSCLC.

PCN91

CONSUMPTION OF ANTINEOPLASTIC AGENTS IN THE SLOVAK REPUBLIC WITHIN THE PERIOD OF 2008-2011

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OBJECTIVES: Cancer is the second leading cause of death in the Slovak Republic with 23 000 new cases diagnosed every year and highest incidence in age group over 60. Antineoplastic agents prevent or inhibit the maturation and proliferation of neoplasms. The main objective of this study was to evaluate the consumption of antineoplastic agents in Slovak Republic within the period of 2008-2011. **METHODS:** Analysed data were abstracted from the Slovak Institute of Drug Control and provided by wholesalers due to their legal obligation towards the SIDC. Processed informations include the number of medicine packages and financial expenditures. **RESULTS:** There was a gradual rise in antineoplastic agents utilisation in terms of financial expenditures from 98 605 418 € in 2009 to 105 786 256 € in 2011. Third quartal of 2010 was hitting a peak with 27 261 629 € respectively while the first quartal plummeted to 23 307 249 €, which presents the lowest performance within followed period. Number of packages rose sequentially from 513 193 in 2008 to 593 067 in 2011. Average price per package was fluctuating from 168 € in 2010 to 192 € in 2008. Highest financial decline was observed in group of plant alkaloids and other natural products (from 12 977 717 € in 2008 to 6 840 618 € in 2011). Most significant expeditures increase from the group of antineoplastic agents reached capecitabine with 3 491 954 € in 2008 and 4 560 623 € in 2011. Its number of packages almost doubled from 8 725 in 2008 to 14 145 in 2011. **CONCLUSIONS:** The slight rise in consumption of antineoplastic agents is caused by higher incidence and prevalence and better diagnose of cancer disease in Slovak population. Higher use of capecitabine can be interpretted in pursuance of breast and colorectal cancer occurence.

PCN92

THE LIFECYCLE VALUE OF ONCOLOGY MEDICINES

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OBJECTIVES: Innovative pharmaceutical treatments contribute significant value for improving and extending the lives of cancer patients. Many innovative oncology products become standard of care and continue to produce significant value well beyond the period of innovator exclusivity. Current tools used to guide 3rd party funding decisions are made at the beginning of product lifecycles and fail to account for the long-term stream of value, particularly from acquisition cost reduction after innovator exclusivity. The objective of this study was to propose a framework to highlight this important aspect for determining the value of new drug innovation using two case studies. **METHODS:** The drugs selected for the cases studies were paclitaxel and azacitidine. Pharmacoeconomic studies evaluating these agents were identified. Applying off-patent prices after exclusivity, a lifecycle ICER was determined by annually amortizing the ICER value over the potential useful life of a product. Results are in Canadian dollars. **RESULTS:** Paclitaxel remains a standard of care in advanced ovarian and breast cancer even after innovator loss of exclusivity in 2004. Using the current off-patent price, the lifecycle ICER for paclitaxel is estimated to be approximately $26,000 per QALY. Azacitidine has become the standard of care for higher-risk MDS in Canada. It is anticipated that azacitidine will remain part of standard care beyond innovator exclusivity. Assuming a 25% reduction in acquisition cost and a further 10 year useful life, the lifecycle ICER for azacitidine is estimated to be approximately $36,000 per QALY. **CONCLUSIONS:** Many innovative oncology medicines provide significant societal value well past the period of innovator exclusivity. Current approaches for assessing economic value fail to recognize this unique aspect and may be undervaluing new oncology medicines. Therefore, approaches should evolve to better account for the societal value a product produces over its useful life span.

CANCER – Patient-Reported Outcomes & Patient Preference Studies

PCN93

ENDOCRINE THERAPYADHERENCE AND PERSISTENCE AND SURVIVAL AMONG WOMEN WITH BREAST CANCER IN BRAZIL

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OBJECTIVES: Identify explanatory variables of hormone therapy (HT) adherence and persistence (A&P) in women with breast cancer (BC), and evaluating the effect of such variables in BC survival rates. **METHODS:** Retrospective longitudinal data from a cohort of 5861 women with BC, submitted to HT, was put together through linkage of the Brazilian National Cancer Institute datasets, including the control of medicines delivered at its Pharmacy. A logistic regression model was applied to study adherence. Cox proportional hazard models were used to estimate persistence and BC survival. **RESULTS:** The proportion of treatment adherent was 75.3%. At the end of the first and the fifth year of treatment, respectively, overall persistence to treatment was 79% and 31%, and survival was 94% and 71%. Similarly, better A&P to treatment, as well as BC survival, were associated with higher education, having a partner, lower cancer stages, being submitted to surgery, having less inpatient care, making outpatient visits to a Mastologist and a Clinical Oncologist, and the need of less exams. Older women were more likely to adhere and to persist to treatment, but those aged 70 years old or more presented higher hazard of death. Alcoholism and tobacco use was associated with lower A&P. Longer time between diagnosis and the beginning of HT and cancer family history were, respectively, a risk and a protective factor to treatment persistence and survival. Psychotherapy was protective for adherence and survival. Finally, treatment adherence was positively associated with BC survival, being combined tamoxifen and aromatase inhibitor explicative of lower adherence, while only aromatase inhibitor use was associated with higher hazard of death. **CONCLUSIONS:** In this cohort, of the patients did not adhere, only 31% completed the 5-year hormone treatment, and 71% were alive after five years. Socio-demographic, behavioral, clinical and health care aspects explained partially variations in these dependent variables.

PCN94

HOW REMAINING YEARS OF LIFE ARE TRADED? – A FEASIBILITY STUDY TO EXPLORE THE APPLICABLENESS OF TIME-TRADE-OFF METHOD IN CHRONIC MYELOID LEUKEMIA OUTPATIENTS TREATED WITH IMATINAB IN TAIWAN

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OBJECTIVES: Since the launch of Imatinib, the survival of chronic myeloid leukemia (CML) has significantly improved, but also caused enormous increase in long-term costs of CML care. Neither health-related utility of CML patients nor long-term cost-effectiveness of imatinib, however, has been investigated in Taiwan. This feasibility study aims to explore the applicableness of time-trade-off (TTO) to measure utility of CML patients treated with imatinib. **METHODS:** This cross-sectional study was conducted at a medical center in southern Taiwan from June 2011 to January 2012. Outpatients with defined diagnosis of CML and receiving imatinib were invited to participate. After TTO measurement, semi-structure interviews were conducted to explore participates' perceptions. The interviews were audiotaped, transcribed verbatim and analyzed by constant comparison untill saturation. **RESULTS:** Of all, 22 (mean age: 52.4±15.83 years, male: 63.6%) of the 24 participants completed the study. The average utility was 0.774±0.219. Most participants accepted current health status and life expectancy, and considered current health status is not different from ideal situation. Mid-age participants traded off life span with parenting duty, while the elderly considered companion time with their partners. For those who chose shorter life span with better health, the main concern was financial burden to family because the disease-related fatigue constrained activity and work ability. In addition, regular medical treatment was also considered by those who desired better career paths, long-term traveling and those consisting of multi-comorbidity. Moreover, uncertainty about future, limited social support and financial difficulty were also the reasons for trading off. **CONCLUSIONS:** TTO is applicable to measure utility for CML patients. Participants receiving imatinib generally presented satisfactory health status and trading remaining years of life with other concerns. To validate this tool, further studies need to explore utilities of patients with disease symptoms or drug-related side effects, and compare the results with disease-specific measures.

PCN95

USING A CONDITION-SPECIFIC MEASURE OF PATIENT-REPORTED OUTCOMES TO DERIVE UTILITIES IN MYELOFIBROSIS

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OBJECTIVES: The limitations of generic preference-based measures in disease areas such as oncology are widely recognised. Condition-specific measures offer more relevant assessments of health and can be used to derive utilities. The aim of this study was to use data collected with the European Organization for Research and Treatment of Cancer (EORTC) Quality of Life Questionnaire for Cancer (QLQ-C30) in a myelofibrosis clinical trial to derive utilities. **METHODS:** QLQ-C30 data were collected over 48 weeks in an open-label trial of ruxolitinib (n=146) versus best-available therapy (BAT) (n=73). Two algorithms were used to map QLQ-C30 scores to utilities: the first mapped to EQ-5D utilities, the second to condition-specific preference weights using a QLQ-C30 item subset (EORTC-8D). Changes from baseline (CFB) in utilities were calculated by treatment at week 48. Mean utilities by presence of constitutional symptoms (CS) (weight loss, fever or night sweats) and response (≥35% reduction in spleen volume from baseline) were also derived. **RESULTS:** Mean (SE) utility CFB from the EQ-5D algorithm was 0.082 (0.025) for ruxolitinib and 0.012 (0.040) for BAT. From the EORTC-8D algorithm, mean (SE) CFB was 0.038 (0.013) for ruxolitinib and 0.013 (0.021) for BAT. Patients without CS had higher mean (SE) utilities than patients with CS using both algorithms—EQ-5D, 0.730 (0.017) without and 0.539 (0.031) with CS; EORTC-8D, 0.818 (0.009) without and 0.719 (0.016) with CS. Similarly, patients defined as responders had higher mean (SE) utilities than nonresponders using both algorithms—EQ-5D, 0.754 (0.029) for responders and 0.670 (0.024) for nonresponders; EORTC-8D, 0.843 (0.015) for re-

sponders and 0.785 (0.012) for nonresponders. **CONCLUSIONS:** Utility values can be derived from condition-specific measures such as the QLQ-C30. Our analyses demonstrate that the presence of CS and splenomegaly in patients with myelofibrosis results in lower utility values.

PCN96

A SYSTEMATIC REVIEW OF HEALTH STATE UTILITIES IN PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA

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OBJECTIVES: To examine published evidence describing preference-based utility weights for hepatocellular carcinoma (HCC) in order to inform health gains within future economic evaluations in HCC. **METHODS:** The systematic review of utilities reported in the technology appraisal submission to the National Institute for Health and Clinical Excellence for sorafenib for advanced HCC (TA189) was updated. Studies that reported preference-based utility weights for HCC indexed in the EMBASE.com database were searched for and included. Bibliographic searching of included studies was conducted to retrieve any additional, relevant studies. Health technology assessments (HTA) submissions reporting relevant data were also included. **RESULTS:** Forty-eight published studies (with 13 primary studies reporting unique data) and two HTA submissions met the inclusion criteria. Four studies directly measured utility or quality of life (QoL) used to derive utility values of patients with HCC; instruments such as the EQ-5D and/or Health Utilities Index Mark Three, or free-standing techniques such as standard gamble or time trade-off (TTO) were employed. The two HTA submissions reported utility weights associated with HCC derived by mapping FACT-HEP clinical trial data to TTO utility values. One cross-study comparison of estimates highlighted that patients without the disease consider the utility associated with HCC to be lower (0.2-0.5) than patients with HCC (0.6-0.8). Utility weights were broadly similar across studies which directly measured utility from patients with HCC or which mapped QoL data from patients with HCC to utility weights, despite differences in study country and utility instrument. Four studies measured QoL using the SF-36 or FACT-G; all demonstrated that scores were lower for the general health perception domain than the other domains. **CONCLUSIONS:** Consistent with trends documented elsewhere in the literature, utility weights derived from patients with disease were generally higher than those derived from individuals without. There exists little variation in utility score by instrument applied.

PCN97

PREFERENCE SCORES FOR 6 TYPES OF CANCER USING FACT AND EQ-5D

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OBJECTIVES: Preference-based scoring approaches to measuring health-related quality of life (HRQL) in cancer are proliferating. The objective of this study was to compare preference-based scores estimated by scoring functions for the generic EQ-5D and cancer-specific Functional Assessment of Cancer Therapy (FACT) in terms of differences between algorithms and cancer subtype. **METHODS:** Secondary data analysis of patients with advanced cancer (breast, brain, colorectum, hepatobiliary system, lung, and ovary; n=41 to 49 for each subgroup) was conducted. Each patient completed both the EQ-5D and FACT; scores were calculated using scoring functions for EQ-5D (Dolan, Shaw et al), an EQ-5D mapping function (Cheng et al) and FACT (Kind/Macran, Dobrez et al). ECOG performance status rated by physician was used to stratify patients by severity. The relative statistical efficiency (RE) of each algorithm to capture differences in severity was compared using ratios of F-statistics. **RESULTS:** The rank order of the scores generated by different scoring functions were fairly consistent across cancer subtype, with the lowest mean scores derived from FACT by Kind/Macran (0.52, hepatobiliary, to 0.57, colorectal), and highest mean scores using scoring by Dobrez et al (0.80, hepatobiliary, to 0.85, brain). Within each scoring function, no statistically significant differences in mean scores were found across cancer types. The Dolan algorithm resulted in largest differences in mean scores by severity (ECOG) grades for brain, breast, colorectal and ovarian cancer. The FACT UK societal algorithm by Kind et al had the largest RE for 3 of the cancers (breast, hepatobiliary, and ovarian cancer). **CONCLUSIONS:** Each scoring approach produced different preference-based scores within and across subtype of cancer; extrapolating from ability to discriminate levels of severity EQ-5D scoring functions generally provided scores that would extrapolate to larger QALY benefits compared to FACT-based approaches. No statistically significant differences in the utility scores were observed across the cancer types, but some differences could be considered meaningful; lack of power was a limitation.

PCN98

THE DEVELOPMENT OF AN INTERNATIONALLY-VALID CANCER-SPECIFIC MULTI-ATTRIBUTE UTILITY INSTRUMENT (MAUI) FROM THE EORTC CORE HEALTH-RELATED QUALITY OF LIFE (HRQOL) QUESTIONNAIRE, QLQ-C30

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OBJECTIVES: Preference-based measures have been derived from various descriptive HRQOL measures. A general 2-stage method has evolved: 1) an item from each domain of the HRQOL measure is selected to form a health state classification system (HSCS), and 2) a sample of health states is valued and an algorithm derived for estimating the utility of all possible health states. The outputs of these two stages represent a MAUI. Our aim was to adapt the first stage for the widely-used cancer-specific QLQ-C30, and apply it to a large, heterogeneous, international dataset as the first step in developing an internationally-valid cancer-specific MAUI. **METHODS:** Secondary analyses were conducted on a pooled dataset comprising QLQ-C30 responses plus demographic and clinical data from 2616 patients from eight countries, over 14 cancer sites, all stages, and all common cancer treatments. The established domain structure of the QLQ-C30 (physical, role, emotional, social and cognitive functioning, plus several symptoms) formed the underlying conceptual model for the MAUI. Generalisability of the conceptual model across cancer sites was tested with multi-group CFA. Items within each domain were then subjected to statistical scrutiny, including Rasch analysis for domains with sufficient items. **RESULTS:** CFA results supported the proposed conceptual model and its generalisability across cancer sites. Two items exhibited floor effects (>75% observations at lowest score), none exhibited misfit to the Rasch model, one exhibited disordered item response thresholds, and two exhibited differential item function by cancer site. These results, along with results for responsiveness and qualitative patient input (analyses underway) will be presented. **CONCLUSIONS:** The next stage of this research will obtain valuations for a range of health states defined by the HSCS from general population samples in various countries. The ability to determine a preference-based utility score from QLQ-C30 responses will facilitate cost-utility analysis in cancer trials which use the QLQ-C30.

PCN99

PREFERENCE-BASED ESTIMATES OF THE HEALTH UTILITY IMPACTS OF BREAST CANCER IN WOMEN AGES 18-44 IN THE UNITED STATES

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OBJECTIVES: Although less than 5% of breast cancers occur among women under 45, the impact on health-related quality of life (HRQOL) may be significant since these cancers strike earlier in a woman's life. This study addresses a gap in the literature on the health utility impacts of breast cancer among U.S. women ages 18-44. **METHODS:** Self-reported cancer history and HRQOL for US women were measured from the 2009 and 2010 Behavioral Risk Factor Surveillance System (BRFSS), a nationally representative population-based survey. BRFSS did not include preference-based measures of HRQOL, so Jia et al.'s (2011) mapping of Healthy Days (HRQOL-4) to the EQ-5D and Shaw et al.'s (2005) estimates of US utility weights were applied. The difference in health utilities and in Healthy Days (non-preference-weighted) was assessed using multivariate regression controlling for sociodemographics and major health risk factors. **RESULTS:** A total of 343 of 133,294 women ages 18-44 in the 2009-2010 BRFSS reported breast cancer. Unadjusted mean utility was .073 lower ($p<0.01$) among women with a history of breast cancer. Among women ages 45 and older, the difference was much smaller, 0.008 ($p<0.01$). Adjusting for sociodemographic factors and years since diagnosis, the decrease in health utility for breast cancer was 0.090 lower ($p<0.01$) for women 18-44; similar analysis of women ages 45 and older with breast cancer showed an estimated impact of 0.017 ($p<0.01$). Mean unhealthy days (physical, mental, or activity limitations) were also significantly lower in younger women with breast cancer. **CONCLUSIONS:** Although women 18-44 are a small fraction of breast cancer cases, the health utility impact at the individual level is substantial. Although the utility decrement is significant for women of all ages, the impact of breast cancer is 5-6 times greater in younger women. Age-specific utility values of breast cancer are critical for generating accurate results from cost-utility and modeling.

PCN100

WOMEN' PREFERENCES FOR CHEMOTHERAPY IN THE TREATMENT OF EARLY STAGE BREAST CANCER

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OBJECTIVES: Patient choice is increasingly recognized as a key factor in medical decision making process. This study aims to investigate preferences for adjuvant chemotherapy among women with early stage breast cancer in Taiwan. **METHODS:** Patient interviews were administered on women aged under 60 who sought treatment for stage I or II stage breast cancer at the outpatient department of two medical centers located in Taipei City, Taiwan. Five attributes of adjuvant chemotherapy was identified as the key determinants when making choices: frequency and administraton, length of treatment, cardiac toxicity, recurrence rate, and out-of-pocket payments.Survey questionnaire was designed based upon discrete choice experiments (DCEs). Preferences for 13 choice sets were elicited with opt-out option included. In total, 104 respondents were recruited by the end of 2011. Multinomial logit model was used to assess the relative value of product features and trade-off between attributes. Cluster analysis was used to Isolate women groups who place differing importance on different features. **RESULTS:** Descriptive statistics showed that most women were marred (77.2%) with mean age of 48.0. About half of the women were ful-time employed (52.6%) and 35.1 of them received years of education > 16 years (35.1%). Prelimanary regression analysis indicated that women significantly preferred shorter length of treatment, no cardiac toxicity, lower recurrence rate and lower out-of-pocket payment. **CONCLUSIONS:** The authorities concerned should incorporate patients' preferences into the existing decision making process when making reimbursement decision.